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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/740,601	12/19/2000	Joe D. Bolding	10003151-1	3782

7590 09/22/2004

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EXAMINER

ROCHE, TRENTON J

ART UNIT PAPER NUMBER

2124

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/740,601	Applicant(s) BOLDING ET AL.	
	Examiner Trent J Roche	Art Unit 2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. In view of the appeal brief filed on 30 April 2004, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below. Accordingly, the finality of the prior office action has been withdrawn.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

2. Claims 1-25 are pending. Claims 1-25 have been examined.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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Claims 1-25 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The invention as disclosed in claims 1-25 is directed to non-statutory subject matter. The claimed invention as a whole must accomplish a practical application. That is, it must produce a “useful, concrete and **tangible** result.” (State Street Bank & Trust Co. v. Signature Financial Group Inc., 149 F.3d at 1373, 47 USPQ2d at 1601-02.)

Specifically, the claims are directed to a method and/or apparatus for selecting a symbol table from among a plurality of symbol tables in a debugging system. This occurs by analyzing an address pointer to determine whether the address pointer falls within one of the plurality of symbol tables; however, the claims do not provide any sort of tangible result of any kind based on this analysis and selection. Specifically, independent claim 1 simply provides a plurality of symbol tables and an address pointer, further stating that a symbol table is selected based on the address pointer. However, the language as stated in claim 1 amounts to an abstract concept; the procedure does not produce a useful, concrete and tangible result. The dependent claims proceed into further detail concerning the analysis of the address pointer among the symbol tables, however, the steps still amount to an abstract concept, and do not produce a tangible result as required by the State Street formulation.

Independent claims 16, 23 and 25 recite similar limitations as that of claim 1, and do not recite any additional limitations that would cure the deficiencies with respect to the non-statutory subject matter. Consequently, claims 1-25 fail to produce a useful, concrete and tangible result as required by the State Street formulation, and are thus directed to non-statutory subject matter.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-6, 13-19, 22 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent Publication 63-223927 by Hashimoto.

***Note*: all page numbers indicated in Hashimoto are in reference to the English translation document, provided by The Ralph McElroy Translation Company**

Regarding claim 1:

Hashimoto discloses:

- selecting a symbol table (“to make reference to the symbol table with respect to the assigned program” on page 2)
- providing a plurality of symbol tables (“the plural symbol tables...” on page 3. Further, note Figure 1, wherein a plurality of symbol tables 101, 102 and 103 are shown.)
- in a computer system (“a system that performs debugging of plural programs” on page 1)
- having an address pointer (“program identification information that uniquely identifies plural programs” on page 2.)
- said symbol tables encompassing a range of addresses (Note Figure 1. The symbol tables include a range of symbols.)

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- selecting at least one of the plurality of symbol tables within whose range of addresses the address pointer is pointing (“the program identification information field in the plural symbol tables is retrieved, and the program identification information field in agreement with program identifier 109 is determined.” on page 3)

substantially as claimed.

Regarding claim 2:

The rejection of claim 1 is incorporated, and further, Hashimoto discloses a debugger performing said selecting of symbol tables as claimed (“in a system that performs debugging of plural programs...it is possible to make reference to the symbol table with respect to the assigned program” on page 2)

Regarding claim 3:

The rejection of claim 2 is incorporated, and further, Hashimoto discloses the selecting being performed each time a debugger transitions from an executing mode to a command mode as claimed (“By means of program identifier 109 assigned at the same time with symbol 110 in the command with respect to debug, the program identification information field in the plural symbol tables is retrieved, and the program identification information field in agreement with program identifier 109 is determined.” on page 3)

Regarding claim 4:

The rejection of claim 1 is incorporated, and further, Hashimoto discloses a computer system performing the selecting of at least one of said plurality of symbol tables as claimed (“in a system

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that performs debugging of plural programs...it is possible to make reference to the symbol table with respect to the assigned program" on page 2)

Regarding claim 5:

The rejection of claim 1 is incorporated, and further, Hashimoto discloses a pointer to a memory location containing instructions to be executed as claimed ("Program identifier 109 holds the value in agreement with the value of the program identification information field of certain symbol table" on page 3)

Regarding claim 6:

The rejection of claim 5 is incorporated, and further, Hashimoto discloses a program counter as claimed ("in a system that performs debugging of plural programs...it is possible to make reference to the symbol table with respect to the assigned program" on page 2. Since the system is running a plurality of programs, a program counter must inherently be used for the identification of the pertinent symbol table.)

Regarding claim 13:

The rejection of claim 1 is incorporated, and further, Hashimoto discloses selecting a symbol table by marking as active as claimed ("to make reference to the symbol table with respect to the assigned program" on page 1. The system would inherently mark the associated symbol table when it determines which table correctly corresponds to the program.)

Regarding claim 14:

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The rejection of claim 13 is incorporated, and further, Hashimoto discloses a debugger using the symbol table as claimed (note the rejection regarding claim 2)

Regarding claim 15:

The rejection of claim 1 is incorporated, and further, Hashimoto discloses the computer system comprising an architectural simulator as claimed ("in a system that performs debugging of plural programs...it is possible to make reference to the symbol table with respect to the assigned program" on page 2. The debugger is simulating the execution of the program.)

Regarding claim 16:

Hashimoto discloses:

- an apparatus for automatically selecting a symbol table in a computer ("a system that performs debugging of plural programs...it is possible to make reference to the symbol table with respect to the assigned program" on page 1)
- a program counter ("in a system that performs debugging of plural programs...it is possible to make reference to the symbol table with respect to the assigned program" on page 2.
Since the system is running a plurality of programs, a program counter must inherently be used for the identification of the pertinent symbol table.)
- a plurality of symbol tables ("the plural symbol tables..." on page 3. Further, note Figure 1, wherein a plurality of symbol tables 101, 102 and 103 are shown.)
- at least one computer readable storage medium ("plural programs in the memory" on page 2)

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- computer readable program code stored on the at least one computer readable storage medium (“plural programs in the memory” on page 2)
- code for selecting one of the plurality of symbol tables (“in a system that performs debugging of plural programs...it is possible to make reference to the symbol table with respect to the assigned program” on page 2)

substantially as claimed.

Regarding claim 17:

The rejection of claim 16 is incorporated, and further, Hashimoto discloses determining whether said program counter contains an address within said address range for said one of said plurality of symbol tables as claimed (“the program identification information field in the plural symbol tables is retrieved, and the program identification information field in agreement with program identifier 109 is determined.” on page 3. Further, the symbol tables contain ranges of symbols.)

Regarding claim 18:

The rejection of claim 16 is incorporated, and further, Hashimoto discloses determining whether said program counter contains an address within a base symbol table as claimed (Note Figure 1. Further, “the program identification information field in the plural symbol tables is retrieved, and the program identification information field in agreement with program identifier 109 is determined.” on page 3. The system checks symbol table 101 before checking symbol tables 102 and 103.)

Regarding claim 19:

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The rejection of claim 16 is incorporated, and further, Hashimoto discloses determining whether said program counter contains an address within an offset symbol table as claimed (Note Figure 1. Further, “the program identification information field in the plural symbol tables is retrieved, and the program identification information field in agreement with program identifier 109 is determined.” on page 3. The system checks symbol table 101 before checking offset symbol tables 102 and 103.)

Regarding claim 22:

The rejection of claim 16 is incorporated, and further, Hashimoto discloses determining whether said one of said plurality of symbol tables is enabled for automatic selection as claimed (“at start of debugging of the program, by reading the symbol table into the debugger by means of the debugger command...” on page 3. The debugger would inherently make the determination.)

Regarding claim 23:

Hashimoto discloses:

- a debugging apparatus, comprising a computer having a plurality of symbol tables stored thereon, a debugger connected to said computer (“in a system that performs debugging of plural programs...it is possible to make reference to the symbol table with respect to the assigned program” on page 2. Further, “the plural symbol tables...” on page 3. Note Figure 1, wherein a plurality of symbol tables 101, 102 and 103 are shown.)
- automatic symbol table selection means for automatically selecting at least one of said plurality of symbol tables in said computer for said debugger (“in a system that performs

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debugging of plural programs...it is possible to make reference to the symbol table with respect to the assigned program” on page 2)

substantially as claimed.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7-12, 20, 21, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Publication 63-223927 by Hashimoto in view of U.S. Patent 5,805,867 to Kodaira.

Per claim 7:

The rejection of claim 1 is incorporated, and further, Hashimoto discloses a symbol table being selected for an active program. Hashimoto does not explicitly disclose a plurality of cells, each of said cell comprising a processing unit having at least one computer processor. Kodaira discloses in an analogous debugging and simulation system the use of multiple processors in a system as claimed (“The processing speed of the entire multi-processor system can be increased when parallel processing is conducted at the same time by a plurality of processors” in col. 1 lines 19-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use multiple processors in the debugging system disclosed by Hashimoto, as this would enable the user

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to experience an increase in processing speed in the debugging system disclosed by Hashimoto, as disclosed by Kodaira in col. 1 lines 19-21.

Per claim 8:

The rejection of claim 7 is incorporated, and further, Hashimoto discloses examining said at least one base symbol table to determine whether said address pointer is pointing within said at least one base symbol table, and examining at least one of said plurality of secondary symbol tables to determine whether said address pointer is pointing within said at least one of said plurality of secondary symbol tables as claimed (Note Figure 1. Further, "the program identification information field in the plural symbol tables is retrieved, and the program identification information field in agreement with program identifier 109 is determined." on page 3. The system checks symbol table 101 before checking offset symbol tables 102 and 103.)

Per claim 9:

The rejection of claim 8 is incorporated, and further, Hashimoto discloses wherein each of said plurality of secondary symbol tables comprises a reference to a base symbol table, a cell identifier, and an address offset specifying an offset from said base symbol table as claimed (Note Figure 1 and the corresponding sections of the disclosure)

Per claim 10:

The rejection of claim 8 is incorporated, and further, Hashimoto discloses wherein at least one base symbol table is examined before said at least one of said plurality of secondary symbol tables is examined as claimed (Note Figure 1. Further, "the program identification information field in the

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plural symbol tables is retrieved, and the program identification information field in agreement with program identifier 109 is determined.” on page 3. The system checks symbol table 101 before checking offset symbol tables 102 and 103.)

Per claim 11:

The rejection of claim 8 is incorporated, and further, Hashimoto discloses wherein at least one of said plurality of secondary symbol tables is only examined if said address pointer is not pointing within said at least one base symbol table as claimed (Note Figure 1. Further, “the program identification information field in the plural symbol tables is retrieved, and the program identification information field in agreement with program identifier 109 is determined.” on page 3. The system checks symbol table 101 before checking offset symbol tables 102 and 103.)

Per claim 12:

The rejection of claim 8 is incorporated, and further, Hashimoto discloses examining at least one of said plurality of secondary symbol tables comprises checking a cell identifier within each of said plurality of secondary symbol tables to determine whether each of said plurality of second symbol tables is associated with that active cell, and examining only tables within said plurality of second symbol tables which are associated with said active cell to determine whether said tables which are associated with said active cell should be selected as claimed (“By means of program identifier 109 assigned at the same time with symbol 110 in the command with respect to debug, the program identification information field in the plural symbol tables is retrieved, and the program identification information field in agreement with program identifier 109 is determined.” on page 3)

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Per claim 20:

The rejection of claim 19 is incorporated, and further, note the rejection regarding claim 7.

Per claim 21:

The rejection of claim 20 is incorporated, and further, note the rejection regarding claim 12.

Per claim 24:

The rejection of claim 23 is incorporated, and further, note the rejection regarding claim 7.

Per claim 25:

Hashimoto discloses:

- an apparatus for automatically selecting a symbol table in a computer having a plurality of symbol tables stored thereon, each of said plurality of symbol tables having a cell identification (“in a system that performs debugging of plural programs...it is possible to make reference to the symbol table with respect to the assigned program” on page 2. Further, “the plural symbol tables...” on page 3. Note Figure 1, wherein a plurality of symbol tables 101, 102 and 103 are shown.)
- at least one computer readable storage medium (“plural programs in the memory” on page 2)
- computer readable program code stored on the at least one computer readable storage medium (“plural programs in the memory” on page 2)

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- code for selecting one of the plurality of symbol tables and using the symbol table with a processing cell (“in a system that performs debugging of plural programs...it is possible to make reference to the symbol table with respect to the assigned program” on page 2)

substantially as claimed. Hashimoto does not explicitly disclose a plurality of processing cells.

Kodaira discloses in an analogous debugging and simulation system the use of multiple processors in a system as claimed (“The processing speed of the entire multi-processor system can be increased when parallel processing is conducted at the same time by a plurality of processors” in col. 1 lines 19-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use multiple processors in the debugging system disclosed by Hashimoto, as this would enable the user to experience an increase in processing speed in the debugging system disclosed by Hashimoto, as disclosed by Kodaira in col. 1 lines 19-21.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trent J Roche whose telephone number is (703)305-4627. The examiner can normally be reached on Monday - Friday, 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (703)305-9662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Trent J Roche
Examiner
Art Unit 2124

TJR



ANIL KHATRI
PRIMARY EXAMINER